

**ABSTRACT**

Communicating diagnostic information to an online service may include communicating with a plurality of user computers having a plurality of modem access sessions. The online service may communicate with the user computers using one or more  
5 gateways. For example, each access session may include a first communication session between the online service and a gateway, and a second communication session between the gateway and a modem of a user computer. Each gateway may gather diagnostic information indicative of corresponding second communication sessions. The diagnostic information may be communicated to the online service using the first communication sessions. The  
10 online service may use the diagnostic information automatically to detect or to diagnose a communication fault.

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